DCCUMENT RESUME

ED 049 740 JC 710 118

AUTHOR	Starkweather, Ann, Comp.
TITLE	Instructional Objectives for a Junior College Course in Basic Offset Printing.
INSTITUTION	California Univ., Los Angeles. ERIC Clearinghouse for Junior Coll. Information.
PUB DATE	Jun 71
NOTE	10p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	*Behavioral Objectives, *Graphic Arts, *Junior Colleges, *Printing

ABSTRACT

These instructional objectives have been selected from materials submitted to the Curriculum Laboratory of the Graduate School of Education at UCLA by Donald M. Lovelee. Arranged by major course goals, these objectives are offered simply as samples that may be used where they correspond to the skills, abilities, and attitudes instructors want their students to acquire. These objectives may also serve as models for assisting instructors to translate other instructional units into specific measurable terms. For other objectives in a related course see: JC 710 132 (Lithographic Photography). (MB)

ED049740

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Instructional Objectives for a Junior College Course in Basic Offset Printing

Ann Starkweather, Compiler

ERIC Clearinghouse for Junior Colleges
University of California
Los Angeles, California

June 1971

JC 710 118

UNIVERSITY OF CALIF.
LOS ANGELES

JUN 1 1971

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INFORMATION

Basic Offset Printing

Copy Preparation

General Objectives:

After completing this segment you will be able to:

1. Operate at least one of the following pieces of cold typesetting equipment: Varityper, IBM Composer, Headliner, Friden Justowriter or IBM Executive. You will demonstrate your ability by composing six lines from handwritten or typed copy. The six lines will be set four ways--flush left, flush right, centered and justified within 30 minutes, maximum of 2 errors.

2. Make camera ready copy from the previously composed material by using two methods of pasteup within 30 minutes. All lines must be straight and clean according to instructor's judgment.

Specific Objectives:

1. Set up the Varityper machine by inserting paper and type segment and make appropriate settings to begin composing copy.

2. Learn the increment values of letters on two proportional spacing composers and demonstrate this knowledge by composing a column of four words so that the right margin is even.

3. Compose three lines of copy on a Varityper or IBM Executive so that each line will be centered

4. Set four lines of copy on a Varityper so that the margins will be even on the left and right sides within a 15 pica line length.

5. Prepare a pasteup with four pieces of copy centered using a wax adhesive.

6. Prepare a pasteup with four pieces of copy and an off-center layout using rubber cement adhesive.

Printing Type Classifications

General Objectives:

After completing this segment you will be able to:

1. Select appropriate type within families, series, and fonts for a letterhead, business card and envelope.

Specific Objectives:

1. Identify, according to their general classification, each of the major type styles when given a printed sheet containing at least one sample of each style of type.
2. List commercial names of two Roman types and two Sans Serif types.
3. Define points and picas in relation to inches by using a printer's line gage to measure two line lengths, two pieces of hot type and two pieces of cold type.

Introduction and History

General Objectives:

After completing this segment you will be able to:

1. Collect and identify samples of printing done by letterpress, lithography, gravure, and silk screen processes.

Line Photography

General Objectives:

After completing this segment you will be able to:

1. Identify the five major parts of a litho process camera.
2. Select the proper film for high contrast litho line negatives.
3. Set up the darkroom for developing negatives.
4. Expose and develop a line negative so that the clear areas will be clear and transparent and the black areas will be completely opaque.
5. Expose and develop a halftone negative so that the full range of tones will be apparent under a magnifier.

Specific Objectives:

1. Demonstrate the parts of a litho process camera by placing a piece of copy in the copy holder and setting the camera for 100% reproduction.
2. Mix A and B litho developers, stop bath, and hypo solution and place in the proper trays in the proper sequences.
3. Make a test negative using four different exposure times to determine the best exposure time.
4. Make a test negative using four different lens openings to determine the best lens opening.
5. Make three negatives using commercial film, clear base litho film and matte base litho film. The different results will show which film is best for line work.
6. Expose and develop a halftone which, in the instructor's opinion, shows a complete range of tones.
7. Expose a halftone which, in the opinion of the instructor, is a flat or low key halftone.
8. Expose a halftone which, in the opinion of the instructor, is a contrasty or high key halftone.
9. Demonstrate your ability to vary exposures and developing by making a negative of fine line copy, a large solid, and a reverse on positive film.

Negative Stripping and Platemaking

General Objectives:

After completing this segment you will be able to:

1. Locate negatives on masking sheets for two different offset presses so that the image will appear in a predetermined position.
2. Expose and develop a metal offset plate.
3. Prepare a direct image master.

Specific Objectives:

1. Locate a single line negative in a masking sheet for a 1250 Multilith so that the image will appear 1 inch from the top edge of the printed sheet and centered in the printed sheet. A window will be cut in the masking sheet and the negative will be completely opaqued.
2. Locate a line negative and a halftone negative in a masking sheet for an 1850 Multilith so that the line negative will be located 1 1/2 inches from the top edge of the printed sheet and 2 inches from the left margin of the printed sheet. The halftone will be located 2 inches from the top edge of the printed sheet and 1 1/2 inches from the right margin of the printed sheet.
3. Determine a proper exposure by exposing a test negative to a metal plate and developing the plate to a solid step four on a Stauffer gray scale.
4. Select the proper chemicals to desensitize, develop, and preserve a metal offset plate.

Printing Ink

General Objectives:

After completing this segment you will be able to:

1. Select the proper ink for use on a coated paper, newsprint, and a bond paper.
2. List the basic ingredients of all printing inks.

3. Use varnishes or reducers to modify a "short" printing ink to make it a "long" ink.

4. Mix colored printing inks to match a predetermined color when viewed under incandescent light.

Printing Papers

General Objectives:

After completing this segment you will be able to:

1. Select from a paper sample cabinet the proper paper for a business letterhead, a handbill, a four-page booklet, and a postcard.

2. Select from an assortment of unmarked papers, samples of bond paper, book paper, cover paper, and index bristol, without error.

3. Figure the quantity and cost of paper required to print five thousand 9 x 12 folders with no allowance for waste or spoilage.

Specific Objectives:

1. List the basic sizes of bond paper, book paper, and index bristol.

2. Write a definition of basic weight and M weight of paper.

3. Determine the grain direction of two paper samples by the folding method and the tearing method.

4. Calculate the number of pieces of 3 x 5 which can be cut from a sheet of 25 1/2 x 30 1/2 index bristol with the grain going the long way on the 3 x 5 piece.

5. Determine the number of 8 1/2 x 11 pieces that can be printed when 3000 sheets of 17 1/2 x 22 1/2 are on hand.

6. Use a paper catalog to figure the cost of 5000 sheets of 23 x 35 - 60M book paper.

Offset Press Fundamentals

General Objectives:

After completing this segment you will be able to:

1. List five of the six basic systems of a conventional offset press.
2. Name orally the three cylinders of a conventional offset press.
3. Name the unconventional presses on the market today and describe the differences that make them unconventional.
4. Set up a 1250 Multilith and print a letterhead on 8 1/2 x 11 bond paper. The position and color will equal a given sample.
5. Wash up a press so that in the instructor's opinion it has been cleaned to industry standards.

Specific Objectives:

1. Feed 8 1/2 x 11 - 20 bond paper through a 1250 Multilith at any machine speed without missing a sheet or picking up doubles.
2. Install ink and water rollers in a 1250 Multilith.
3. Arrive at and maintain a balance of ink and water throughout a printing run of one thousand 8 1/2 x 11 letterheads.
4. Describe three methods of washing a press and use one of those methods to wash up the 1250 Multilith.

Offset Presswork Problems

General Objectives:

After completing this segment you will be able to:

1. Correct and adjust feeding and register problems on a 1250 Multilith.
2. Identify the problem and list at least two possible remedies when shown three samples of incorrect printing.

3. Modify a general purpose ink so that it can be used in a 1250 Multilith to print on coated paper. The resulting copy will be, in the instructor's opinion, up to industry standards.

4. Make adjustments in ink and water rollers of a 1250 Multilith so that the ink stripe is 3/16" wide and parallel and the water rollers show an even pressure when tested with 1" strips of paper at each end of the roller.

Specific Objectives:

1. Adjust the feeder for three different sizes and weights of paper so that it feeds continuously.

2. Adjust the feed roll pressure for three different weights of paper to maintain vertical registration.

3. Adjust cylinder pressures to fit the requirements of paper masters and metal plates.

4. Change the pH of the fountain solution to fit paper masters and metal plates.

5. Replace dampener covers on a 1250 Multilith when, in the instructor's opinion, they can no longer produce commercially acceptable printing.

6. Change the blanket on a 1250 Multilith when, in the instructor's opinion, the blanket is dented, cut or glazed and will no longer produce quality printing.

Bindery Operations and Service Industries

General Objectives:

After completing this segment you will be able to:

1. Combine folding, stitching and trimming operations to produce twenty 16 page booklets. Ten booklets will be saddle stitched and ten booklets will be side stitched. All operations will be completed in one hour or less.

Specific Objectives:

1. Use a hydraulic paper cutter to cut a ream of 17 x 22 bond paper into four reams of 8 1/2 x 11. Each of the four reams of 8 1/2 x 11 will be exactly the same size with square sides. The

operations will be completed in five minutes or less.

2. Set up a buckle type folder and fold fifty sheets of 8 1/2 x 11 - 20 bond into the four basic parallel folds. The four folding operations will be completed in one hour or less.

3. Set up and operate a paper drill to drill three holes in a ream of 8 1/2 x 11 paper to match a standard three ring binder. Set up and drilling will be completed in fifteen minutes.

4. Wrap identify three packages of 8 1/2 x 11 - 20 bond paper so that the wrapping is tight, the corners sharp and the sides square. Wrapping will be completed in ten minutes or less.

5. List five bindery operations which might normally be let out to a bindery or service industry.

Halftone Photography

General Objectives:

After completing this segment you will be able to:

1. Expose and develop on orthochromatic film a halftone which in the instructor's opinion meets or exceeds industry standards.

Specific Objectives:

1. Use autoscreen film to expose and develop a halftone which shows a full range of dots from shadows to highlights.

2. Use a gray contact screen and orthochromatic film to expose and develop a halftone which shows a full range of dots from shadows to highlights.

3. Determine the proper exposure of a given halftone by exposing and developing three test negatives on orthochromatic film which show over exposure, under exposure and proper exposure.

Process Color

General Objectives:

After completing this segment you will be able to:

1. List the four color separations and their exposure screen angles for producing four color direct color separations.

2. List the filters and film used to obtain four color direct separations.

3. Expose and develop two halftones which in the instructor's opinion are suitable for duotone reproduction.

4. List the four steps involved in preparing 4 color separations by the indirect method.

This is an involved and expensive procedure and few students will develop sufficient skill to attempt an actual separation project.